



DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
450 110th Ave NE., P.O. BOX 90012
BELLEVUE, WA 98009-9012

OPTIONAL DETERMINATION OF NON-SIGNIFICANCE (DNS) NOTICE MATERIALS

The attached materials are being sent to you pursuant to the requirements for the Optional DNS Process (WAC 197-11-355). A DNS on the attached proposal is likely. This may be the only opportunity to comment on environmental impacts of the proposal. Mitigation measures from standard codes will apply. Project review may require mitigation regardless of whether an EIS is prepared. A copy of the subsequent threshold determination for this proposal may be obtained upon request.

File No.

Project Name/Address:

Planner:

Minimum Comment Period:

Materials included in this Notice:

Blue Bulletin
Checklist
Vicinity Map
Plans
Other:

OTHERS TO RECEIVE THIS DOCUMENT:

State Department of Fish and Wildlife
State Department of Ecology, Shoreline Planner N.W. Region
Army Corps of Engineers
Attorney General
Muckleshoot Indian Tribe

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background

1. Name of proposed project, if applicable: ***Porwal/Chen Residence Hillside Landscape***
2. Name of applicant: ***Jiayi (Chloe) Chen + Nishit Porwal***
3. Address and phone number of applicant and contact person:

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Jiayi (Chloe) Chen
4342 Somerset Blvd SE
Bellevue Wa 98006,
(636)-448-4158

4. Date checklist prepared: **July 28, 2021**

5. Agency requesting checklist: **City of Bellevue Washington**

Development Services Department

6. Proposed timing or schedule (including phasing, if applicable):
The project is anticipated to begin construction as soon as permits are issued, (provided the issue date is not during the rainy season Oct. 1 through April 30.)

It is hopeful the project can be completed before Oct. 1 2021. If this is not possible the work would begin spring 2022, after April 30 2022.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? *If yes, explain.*
There are no plans for future additions expansions to the house at this time related to this proposal. However, there may be a patio renovation done at a later time in the future in a year or two. There may be planting and drainage installed in the front yard as part of this project pending construction costs.

Per WAC
197-11-800(1)(b)
and BCC
22.02.032.D.1,
the construction
or location of a
single-family
residence is
categorically
exempt from
SEPA review.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

A "geotechnical recommendations letter" has been submitted from Associated Earth Sciences Inc. Dated May 20, 2021.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? *If yes, explain.*
None are known at this time

10. List any government approvals or permits that will be needed for your proposal, if known.
Street Use Permit,
Clear and Grade Permit,
Tree Removal Permit for 4 Trees in the ROW
Possibly a Drainage Permit (to tie existing downspouts from room into the city storm drain if possible.)

Critical Areas Land
Use Permit
(CALUP), reviewed
under permit
#21-107579 LO.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The proposed landscaping project area is approx.. 100 lin feet x 28.8 lin feet. About half of the this area is located in the Somerset Blvd. SE ROW.

The purpose of the proposed landscape project is to remove 4 cherry trees at the toe of the slope that have been topped in order to preserve the views required by the

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neighborhood ccr's and to remove black berry bramble and to remove a 4' ht arborvitae hedge that is located at the top off the slope.

The proposed plant material is comprised of native and non native species and is intended to beautify the hillside, aid in runoff by planting materials with rootsystems that protect the soils and be easily maintained at heights that meet the required view restrictions by the ccr's.

The proposed fence at the top of the slope is to protect kids, balls, and dogs from running down the steep slope adjacent to the existing lawn + patio space to remain.

There are existing perforated drains sitting above grade carrying roof water to the street. These are proposed to be tight lined and connect to the storm drain if permitted by the city of Bellevue.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Parcel Number: 7855000150

The proposed project is located at a single family residence located at 4342 Somerset Blvd Se Bellevue Wa 98008. Legal description is SOMERSET ADD

The project area is located on the west facing hillside of the property, directly adjacent to the edge of pavement on Somerset Blvd. The project area extends the length of the west property line and 28 feet inbound from the edge of Somerset Blvd edge of pavement. The grade change from top of slope to toe of slope varies in this area from 10' to 13' ft. and ranges in inclination from 40% to 50%

B. Environmental Elements

1. Earth

a. General description of the site: **Designated Steep Slope**

(circle one): Flat, rolling, hilly, **steep slopes**, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)? **50%**

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Per the Geotechnical Recommendations letter prepared by associated earth sciences dated May 20, 2022. There is three feet depth over loose fill soil and landscape bark and mulch over Blakely Formation Bed Rock.

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d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. **There are None indicated in the geotech recommendation letter. None visible on site or the immediate vicinity.**

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

There will be no fill soil imported. The landscape area will be cleared of blackberry and weeds to as minimal depth as possible. Planting will be pocket planted. Soils dug for planting will be amended with organic materials and spread to fine grade around planting.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion should be minimum and manageable provided work is done quickly and hog fuel mulch installed directly after the planting is completed to avoid rutting of soils. BMP's of install landscape fabric at the toe of the slope will be employed to contain any possible erosion during construction

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

There is no additional impervious surface proposed

Up to 45% is permitted on the site in the R-3.5 zone.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

New plantings will be stabilized with approved City of Bellevue bioengineering technique; Netting will be installed.

Revegetation with Native and Non Native locally sourced plants.

Best Management Practices (BPMs) for erosion and sediment control measures are required per BCC 23.76.

The project construction manager for the contractor will dial before any digging and identify the natural water flow and drainage patterns prior to construction and monitor the site conditions. Entry and exit route from the hillside will be controlled and fenced with construction fencing along sommerset blvd SE.

Contractor and Applicant will follow the "Environmental Best Management Practices & Design Standards from the City of Bellevue described in chapter 4 after installation described in Chapter 1 "Post Construction"

The Somerset bldv will be swept or blown as needed to ensure no soils dirt or debry of any kind is in the roadway.

Removal of any/all Black berry, Morning Glory, Ivy and scotch broom will be done by hand digging.

Soils wil be amended in the planting pockets to improve water holding capability and add nutrients.

Drip Irrigation is proposed on the hillside to aid in plant establishment and sustainability.

2. Air

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- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

The majority of work on this project will be by hand. The only expected emission to the air will be from the landscape truck importing plant materials and mulch and transporting working and materials to the site.

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. ***No offside sources are known***

- c. Proposed measures to reduce or control emissions or other impacts to air, if any:
Plant materials will likely be brought in one delivery truck

3. Water

- a. Surface Water:

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Coal Creek is approximately 1.5 miles away

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. ***No***

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. ***Not Applicable***

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. ***No Not Applicable***

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. ***No, Not Applicable***

FEMA FIRM Panel
#53033C0658G

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. ***No, Not Applicable***

- b. Ground Water:

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No, Not Applicable

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the

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following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Not Applicable

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Runoff from the planting beds will be absorbed by plantings and infiltrate into the soils. Water from the roof will be captured in tighlines and connected to the storm sewer with permit from City of Bellevue. Water from the front yard will be collected by drainage system on site.

No water will flow directly into Coal Creek.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

No

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Irrigation installed will be drip

4. Plants

a. Check the types of vegetation found on the site:

☒ deciduous tree: alder, maple, aspen, other

☒ evergreen tree: fir, cedar, pine, other

☒ shrubs

☒ grass

☐ pasture

☐ crop or grain

☐ Orchards, vineyards or other permanent crops.

☐ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other

☐ water plants: water lily, eelgrass, milfoil, other

☐ other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Removal of weeds and 4 topped cherry trees

c. List threatened and endangered species known to be on or near the site. **None**

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- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: **Landscape Proposed includes native and non native**

**NOTE: Soils used to amend will from the Bellevue Approved Product Providers
Soil additions to established landscapes either Winter Mix (Cedar Grove), or Supreme Mix (Pacific Topsoil)**

- e. List all noxious weeds and invasive species known to be on or near the site. **Blackberry, morning glory, horse tail, ivy**

5. Animals

- a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. **Songbirds**

Examples include:

birds: hawk, heron, eagle, songbirds, other:

mammals: deer, bear, elk, beaver, other:

fish: bass, salmon, trout, herring, shellfish, other _____

- b. List any threatened and endangered species known to be on or near the site.
None known

- c. Is the site part of a migration route? If so, explain. **None known**

- d. Proposed measures to preserve or enhance wildlife, if any: **Berrying Plant material and plant material proposed to establish nesting area and shelter for birds**

- e. List any invasive animal species known to be on or near the site. **None known**

6. Energy and Natural Resources

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

None

- b. Would your project affect the potential use of solar energy by adjacent properties?
If so, generally describe. **None**

- c. What kinds of energy conservation features are included in the plans of this proposal?
List other proposed measures to reduce or control energy impacts, if any:

None

7. Environmental Health

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- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

None

- 1) Describe any known or possible contamination at the site from present or past uses.

None

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

None

- 4) Describe special emergency services that might be required.

None

- 5) Proposed measures to reduce or control environmental health hazards, if any: **None**

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Work will be by hand. However, leaf blower will be used to clean the site. Workers will likely park in the alley not on Somerset. Street use permit will be needed for delivery of plant material and mulch. This project should be completed in 2- 3 weeks.

Construction noise shall comply with the requirements of BCC 9.18.

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

None

- 3) Proposed measures to reduce or control noise impacts, if any:

Leaf blowers will only be used as needed at the end of each day.

8. Land and Shoreline Use

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

Residential single family

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? **No**

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how: **No**

- c. Describe any structures on the site.

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Residential single family home. Single Story

d. Will any structures be demolished? If so, what? **No**

e. What is the current zoning classification of the site? **Residential single family**

Single-Family Residential
(R-3.5)

f. What is the current comprehensive plan designation of the site? **Residential single family**

Single-Family - Medium
Density

g. If applicable, what is the current shoreline master program designation of the site? **Not Applicable**

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
Steep Slope in the project area

Subject to the Critical
Areas Overlay District,
Part 20.25H of the
Bellevue Land Use Code.

i. Approximately how many people would reside or work in the completed project?
Not Applicable

j. Approximately how many people would the completed project displace?
Not Applicable

k. Proposed measures to avoid or reduce displacement impacts, if any:
Not Applicable

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
Not Applicable

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any: **Not Applicable**

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
Not Applicable

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
Not Applicable

c. Proposed measures to reduce or control housing impacts, if any:
Not Applicable

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?
Not Applicable

b. What views in the immediate vicinity would be altered or obstructed? **NONE**

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- c. Proposed measures to reduce or control aesthetic impacts, if any: ***Planting for all season interest***

11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

NONE

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

NO

- c. What existing off-site sources of light or glare may affect your proposal?

NONE

- d. Proposed measures to reduce or control light and glare impacts, if any:

NONE

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?

New Castke Beach Park + Coal Creek Nature Area are 1.5- 2 mi. away

- b. Would the proposed project displace any existing recreational uses? If so, describe.

NONE

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

NONE

13. Historic and cultural preservation

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.

NONE

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

NONE

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

NONE

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- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

NONE

Compliance with Inadvertent Discovery regulations required: RCW 27.44.055, 68.500.645 & 68.60.055.

14. Transportation

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

Somerset Blvd. SE

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

Not Applicable

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

Not Applicable

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Not Applicable

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Not Applicable

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

Not Applicable

- h. Proposed measures to reduce or control transportation impacts, if any:

Not Applicable

15. Public Services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Not Applicable

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b. Proposed measures to reduce or control direct impacts on public services, if any.

Not Applicable

16. Utilities

a. Circle utilities currently available at the site:

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system,
other _____

ALL

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. **NONE**

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Kim Rooney

Name of signee: Kim Rooney Landscape Architect _____

Position and Agency/Organization : Kim Rooney Landscape Architect

Date Submitted: July 28, 2021

D. Supplemental sheet for nonproject actions

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

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Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

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7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

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SINGLE FAMILY RESIDENCE
PARCEL NUMBER: 785500-0150
OWNER: PORWAL NISHIT A & CHEN JIAY

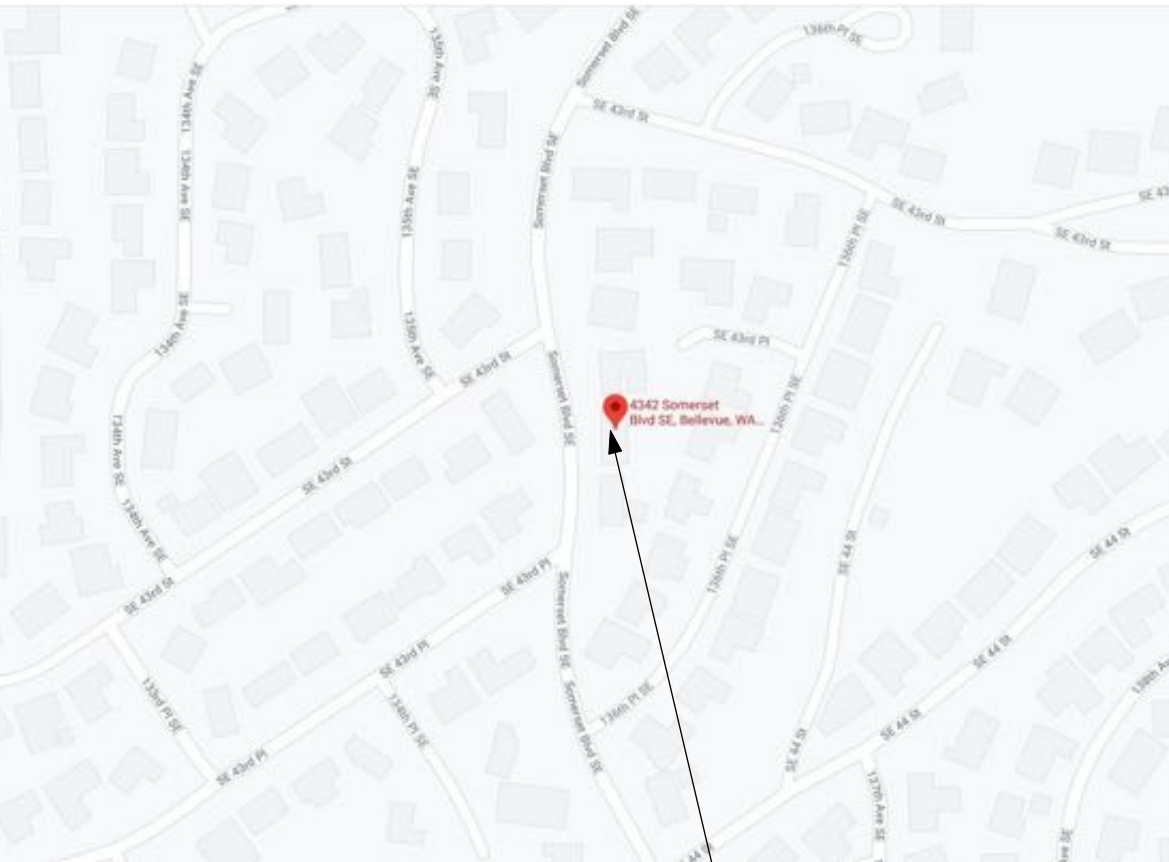
LEGAL:
SOMERSET ADD

LOT 15 OF SOMERSET, AS PER PLAT RECORDED IN VOLUME 65 OF PLATS,
PAGES 1 AND 2, RECORDS OF KING COUNTY AUDITOR;

SITUATE IN THE CITY OF BELLEVUE, COUNTY OF KING, STATE OF
WASHINGTON.



ISSUE DATE: 04/13/21



Location Map

COVERAGE CALCULATIONS		
LOT SIZE	9785 SF	
STEEP SLOPE	1300 SF	
BUILDING FOOTPRINT FIRST FLOOR	2588 SF	30% COVERAGE

IMPERVIOUS SURFACE AREAS	
AREA	EXISTING SF
BUILDING FOOTPRINT	2588 SF
DRIVEWAY	700 SF
FRONT WALK	100 SF
COVERED ENTRY	35 SF
STONE PATIO	640 SF
SIDE YARD PATH	100 SF
GARDEN PATH	0 SF
	4,163 SF



STREET VIEW

CLIENT NAME:

CHEN & PORWAL RESIDENCE
4342 SOMERSET BLVD SE
Bellevue, WA 98006

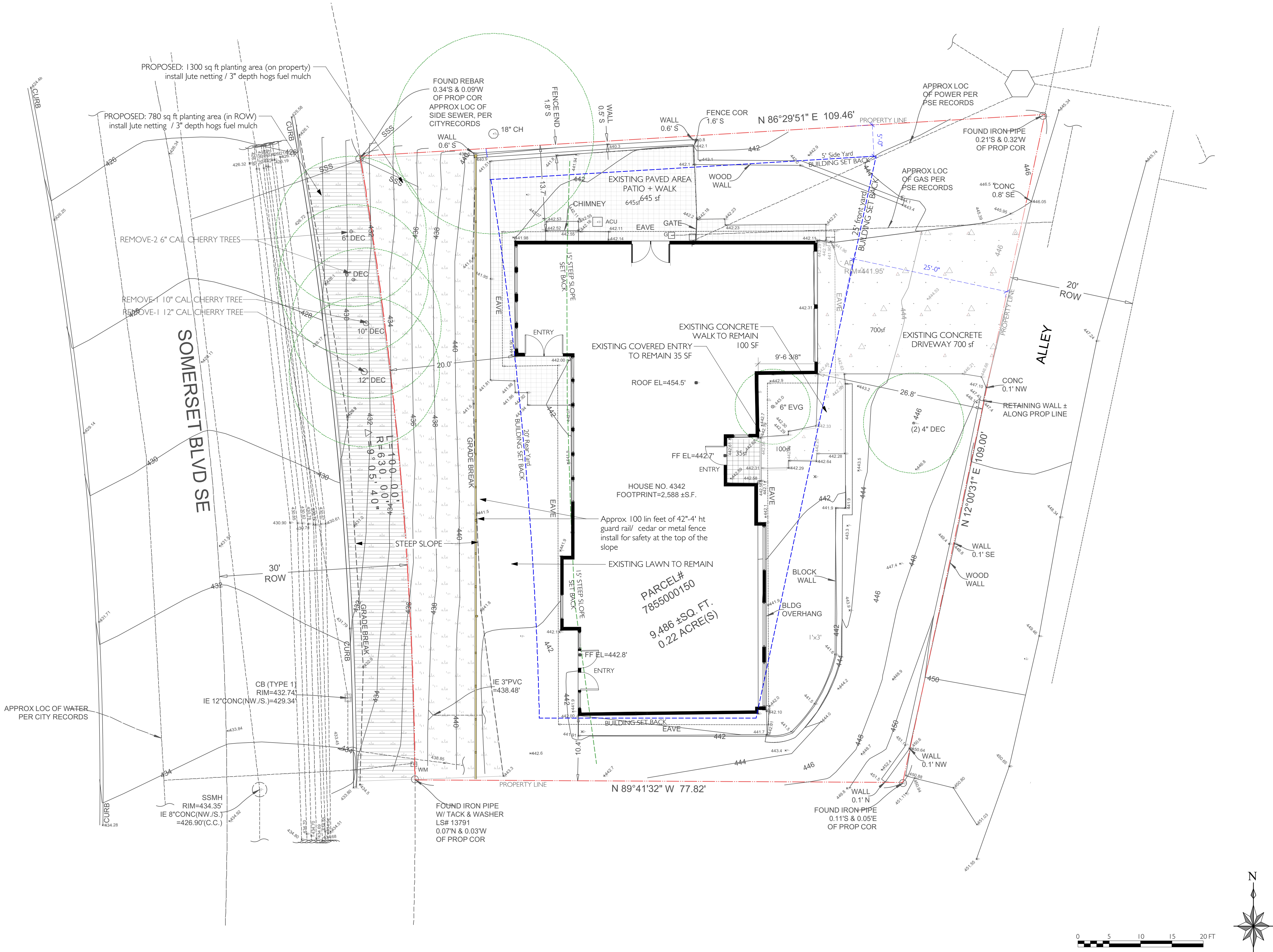
SHEET NAME:

SITE PLAN

SCALE: 1/8"=1'-0"

SHEET NUMBER:

LI



1 SITE PLAN B
Sht.L1 Scale: 1/8" = 1'-0"



Kim Rooney
landscape architect
2307 Viewmont Way West
Seattle, Washington 98199
cell: 206.920.1323
kim@kimrooneyinc.com
www.kimrooney.com



ISSUE DATE: 04/15/21

CLIENT NAME:

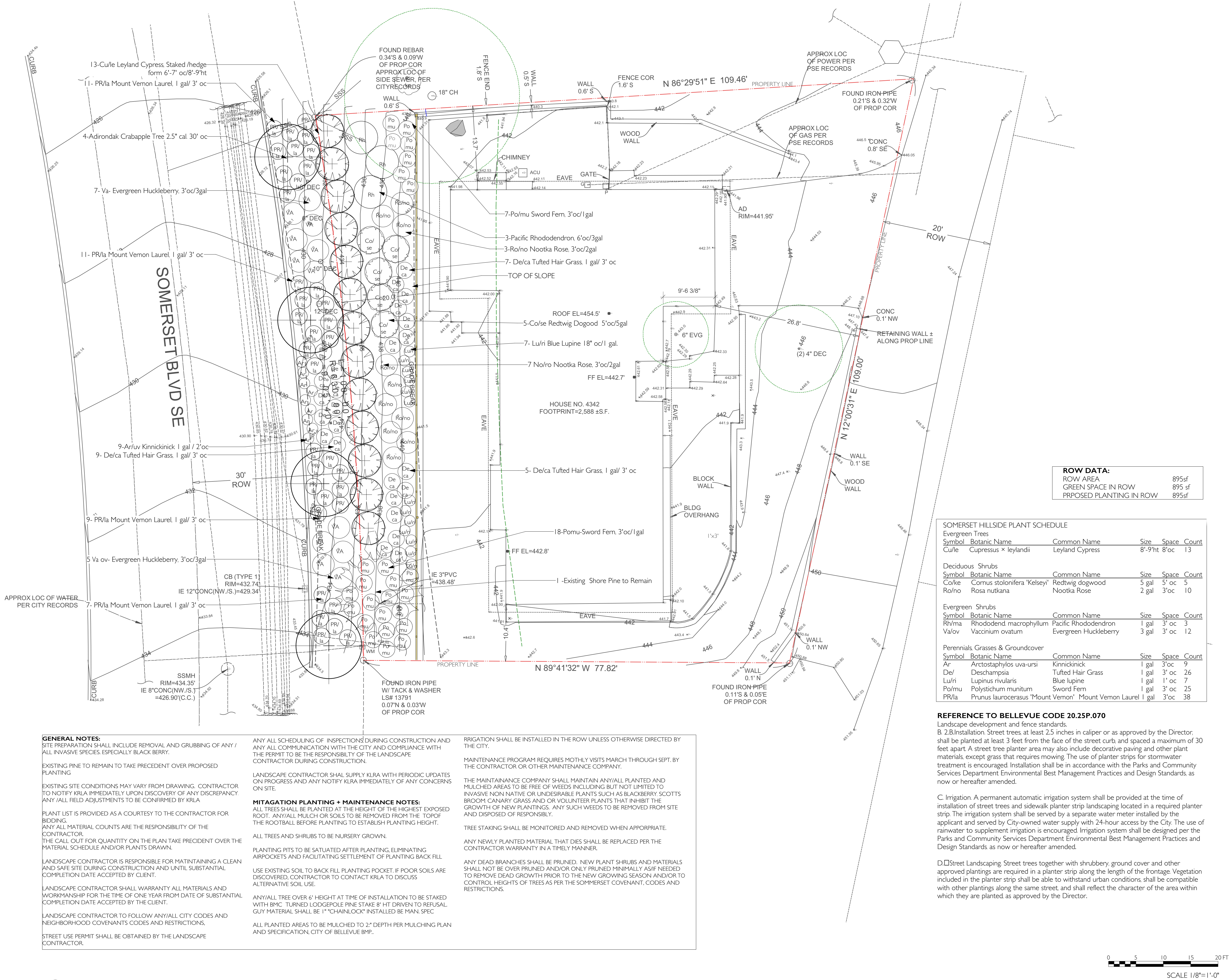
CHEN & PORWAL RESIDENCE
4342 SOMERSET BLVD SE
Bellevue, WA 98006

SHEET NAME:

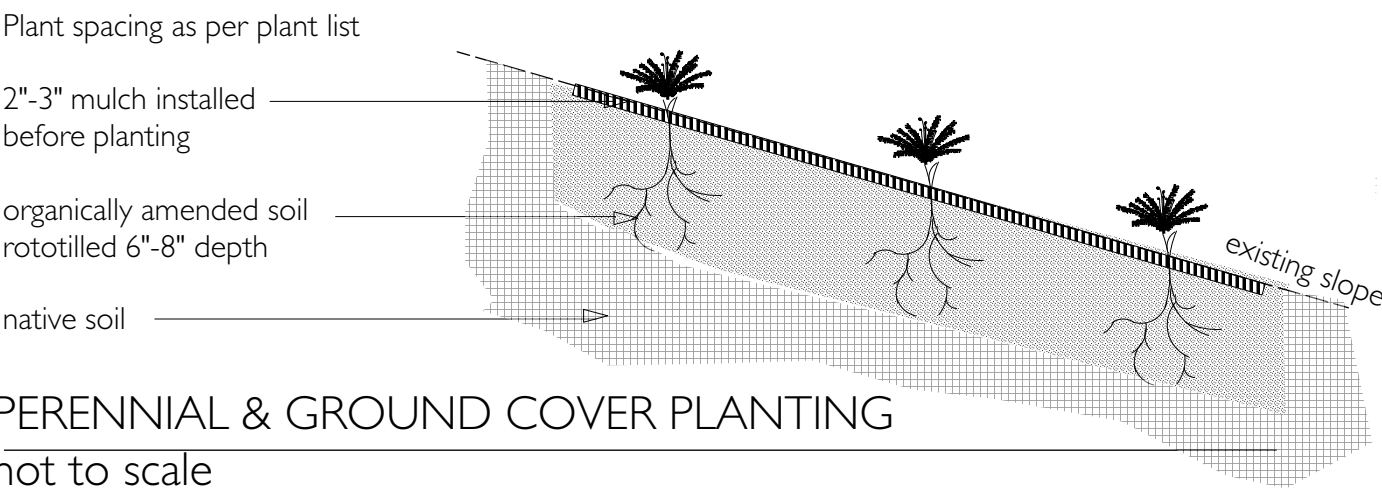
LANDSCAPE
MITIGATION-
ENHANCEMENT
PLANTING PLAN

SHEET NUMBER:

LUP-I of 4



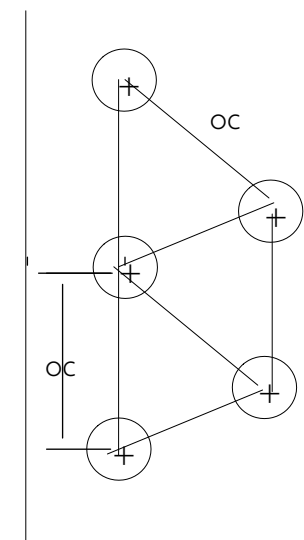
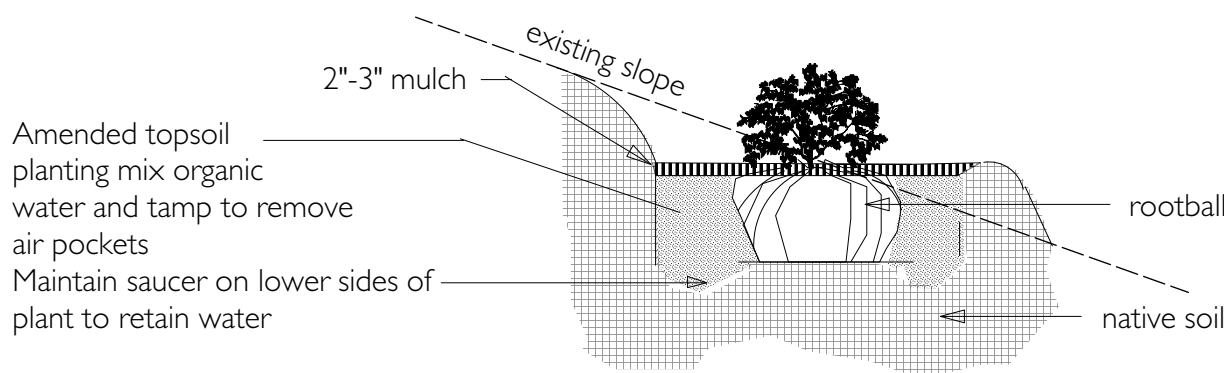
PLANTING DETAILS



NOTE: Distance from walk edge or planter is 1/2 the specifeid o.c. spacing

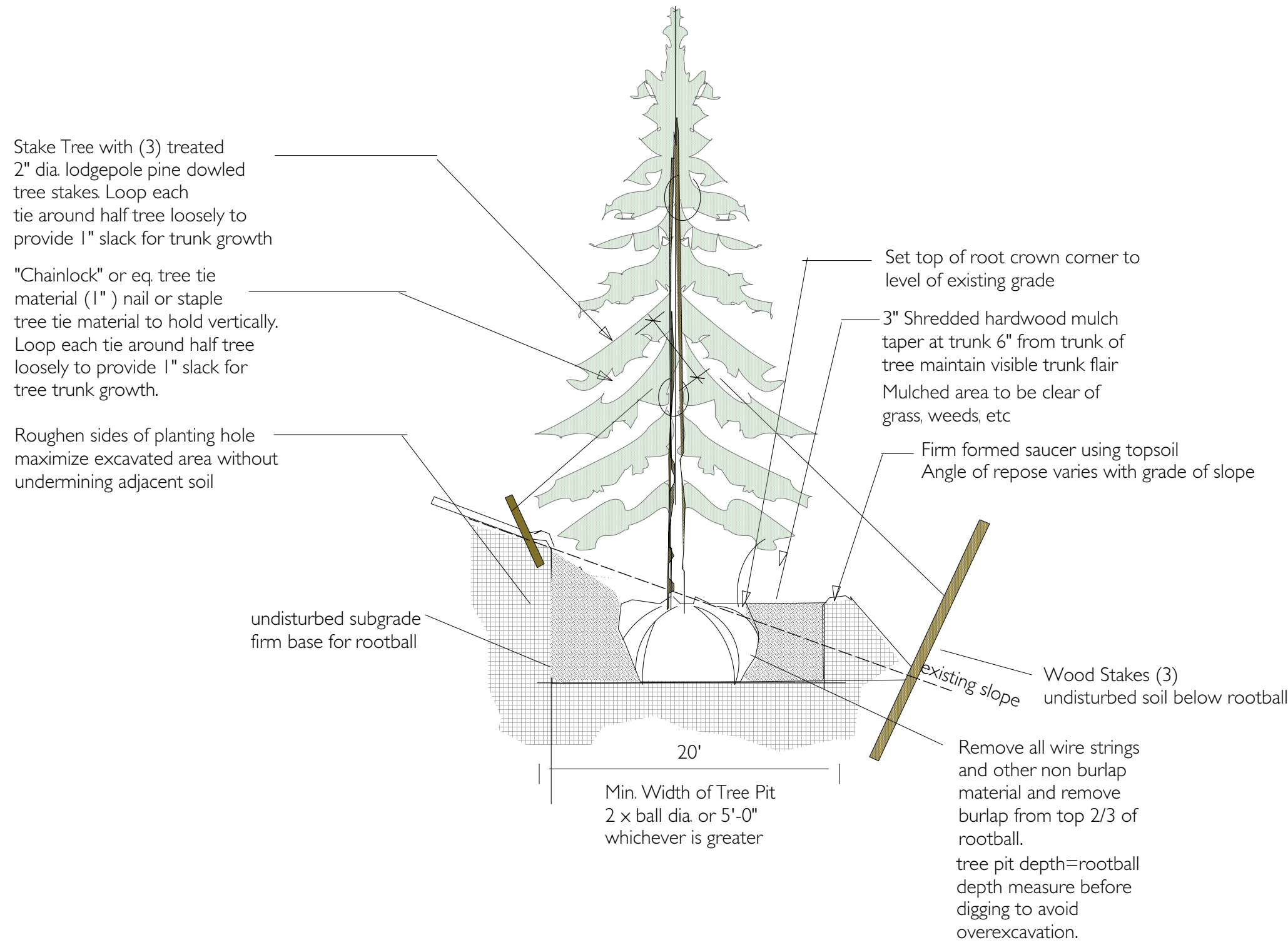
Groundcover and Shrubs to be spaced/planted per plan SHEET L-1 with on center o.c. spacing noted in plant lists and planted per diagram.

Tri- Space at specified oc distance- equidistant



SHRUB PLANTING ON SLOPE

not to scale



EVERGREN TREE PLANTING ON SLOPE DETAIL

not to scale

NOTES & SPECIFICATIONS

CONTRACT + BIDDING

1. Materials lists and take offs provided on the landscape plans are to be measured, calculated, counted and verified by the landscape contractor or sub-contractor prior to bidding, order and delivery of materials. Landscape architect is not responsible for quantity of materials. Contractor must notify landscape architect immediately to review any /all discrepancy found. The drawing takes precedent over the material list on this set. Text /plant call out on the Planting Plan takes precedent over the graphic.

2. Material availability may require substitution of specified product(s) or species. Landscape architect to be consulted and client notified in written email prior for approval. Written approval by the landscape architect is required for any/ all substitutions in material species or sizes.

DIMENSIONS:

1. Do not scale drawings. Site measurements to be verified by contractor prior to starting construction. Contractor and/or sub contractor to notify landscape architect of any/all site discrepancies immediately upon discovery.

2. If work is started prior to notification of discrepancy, the general, the landscape contractor and/or any subcontractor proceed at their own risk, as field adjustments must be approved by landscape architect prior to any/ all field adjustment.

3. Unless otherwise noted any/all dimensions are to face of exterior wall, center of tree, or center of posts, edge of pavement.

SITE CONDITIONS:

1. Site to be kept clean at end of each working day. Any/ all wrappers, pvc pipes, waste of any kind to be properly disposed of each day. Hardscapes are to be hosed down and/or swept or blown at end of each/every day.

2. Tools, machines & materials to be stored in safe and sitely manner.

3. There is no smoking allowed on the site. The contractor may be asked to leave the site if this rule is not complied with.

FINE GRADING + MULCH:

1. No grading, and/or storage of materials or heavy equipment shall occur within the drip of existing trees or on any sloped area considered to be ECA.

2. Existing trees to remain are to be protected with protective fence per city code requirements and BMP specifications. Avoid disturbance of soils under any/all tree drip line unless area is disturbed for the purposed of planting a container.

3. In all areas where access may be limited over existing tree roots, an 18" depth of hog fuel or approved substitute temporary protective surface material is required.

4. No excess soil and/ or pile of soil or mulch is to be stored under the dripline or at the base of any tree or in any sloped area.

5. No disposal of chemicals of any kind shall occur on the grounds at any time.

6. Contractor shall notify the landscape architect or arborist immediately of any damage or signs of obvious stress to any protected tree.

7. Seasonal watering and maintenance of any existing plant material tree or materials that may be intended for transplant may be needed during the construcion process by the contractor.

8. Subgrades are not to be modified in any designated ECA sloped area.

9. Conditions on site may differ from drawing. Contractor to notify Landscape Architect immediate of any / all appearant discrepancy.

EXISTING UTILITIES:

1. Contractor to request locate service prior to commencement of construction.

PLANTING :

1. All plant material brought to the site is to be healthy and free of pest or any disease.

2. All plant material to meet ASNS standards. Contractor responsible for replacement of any plant that does not meet these standards. Any/ all plant material brought to site shall have unbroken branches, undamaged leaves. Reference this site for the ASNS guidelines <http://americanhort.org/http://www.urbanforestrysouth.org/resources/librar y/citations/american-standard-for-nursery-stock>

3. Installation of any plant material under existing tree or on steep sloped shall be pit planted.

4. Contractor to consult with landscape architect on site prior to relocation, pruning or removal of any material.

5. Contractor to place plants per the planting plan as drawn and per spacing as labeled in the material list. Plant layout to be approved by lanscape architect or home owner on site prior to installation. Contractor is required to adjust location of material as directed by KRLA if locations of materials need to be adjusted for any reason including but not limited to; sun-shade conditions, size or form of material, branching patterns, improper spacing.

6. Tree face must be approved by krla or the home owner prior to planting.

PLANT & MATERIAL TOXICITY DISCLAIMER:

Landscape architect is not responsible for any harm that may be casued by ingestion or interaction with materials proposed in the plan planting or any other material on site. Some planting are considered edible. It is the responsibility of the owner to be aware of plants that may be toxic or not intened for ingestion by pets or children.

DEER, RACCOONS OR OTHER PEST DISCLAIMER:

Landscape architect is not responsible for any harm that may be done to materials selected by deer, raccoon or any other animal or pest that may attempt to eat or distroy materials.

SOIL PREPARATION + MULCH

1. Any/All imported mulch to be clean and free of contaminants or weeds or rocks, or pebbles, or sticks. Prior to import of new mulch beds are to be raked free of rocks over 3" or excessive gravels or twigs or sticks.

2. Any/All soil in beds with 20 % slope or less to be raked free of rock and gravel and debris.

4. Planting to be pit planted.

5. All planting bed areas not on the steep slope unless other wise notes are to be topdressed mulched with 2"-3" "Fish Compost" mulch from Dirt Exchange or eq.. Alternative mulch must to be approved by krla or the home owner and a sample to be provided by contractor to krla or to the site for approval from krla.

6. Any/all mulch in non steep slope area to be placed and raked to a smooth condition prior to layout of any/all 4" plant materials. Any and all 4" groundcover or potted or plug sized materials are to be planted after mulch is placed and raked. Any/all mulch disturbed by planting to be re-raked leaving the planting beds free of clumped mulch or foot prints.

7. In planting beds with slope of +/- 20% additional placement erosion control Jute Netting and hogs fuel mulch to be installed as per specifications sheet L-1 of this set. Contractor is to notify the landscape architett immediately on discovery of rutting or erosion in planting areas.

SITE INSPECTIONS:

1. Site inspection or visits by krla may be planned or impromptu. Unless the Owner is taking the responsibility of construction observation.

2. Landscape architect or Home owner may inform the project manager or forman or workers on site of any or all issues that needs to be corrected on site. Any correction requested whether verbal or written to any member of the crew or subcontractor is considered to be to the responsibility of the contractor to correct in a timely manner. It is assumed that any worker employed by the contractor is a representative of that contractor and able to communicate the item that needs to be corrected to either the project manager or appropriate worker.

3. Contractor or subcontractor is responsible for requesting clarification if a requested site correction is unclear.

4. It is assumed that correction requested is within the contracted scope of work unless otherwise stated by the contractor as additional work. If deemed additional work a formal change order is required prior to performing the work. If any work is done without a written approval from the client the contractor takes the risk that additional fees may or may not be approved and collected from the client. KRLA is not responsible for any collection of construction contractors fees.

5. Additional fees for work, products, or any contractor compensation are never the responsibility of the landscape archiect at any time under any circumstance.

CODE COMPLIANCE:

1. ALL WORK SHALL COMPLY WITH CITY CODES AND ORDINANCES IN WHICH WORK IS BEING DONE.

2. ANY AND ALL STREET USE PERMITS OR BUILDING PERMITS SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF ANY WORK ON SITE.



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ISSUE DATE: 04/15/21

CLIENT NAME:

CHEN&PORWAL RESIDENCE
4342 SOMERSET BLVD SE
Bellevue, WA 98006

SHEET NAME:

PLANTING
DETAILS

SHEET NUMBER:

LUP-2 of 4



CLIENT NAME:

CHEN&PORWAL RESIDENCE

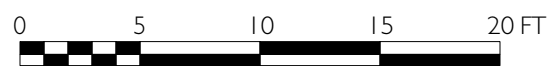
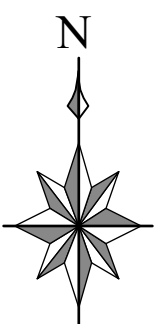
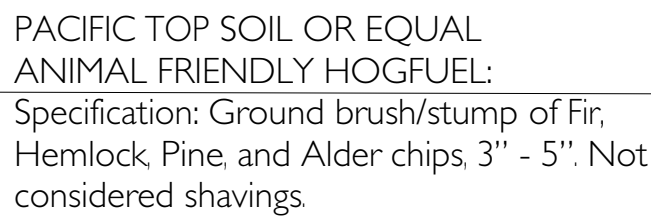
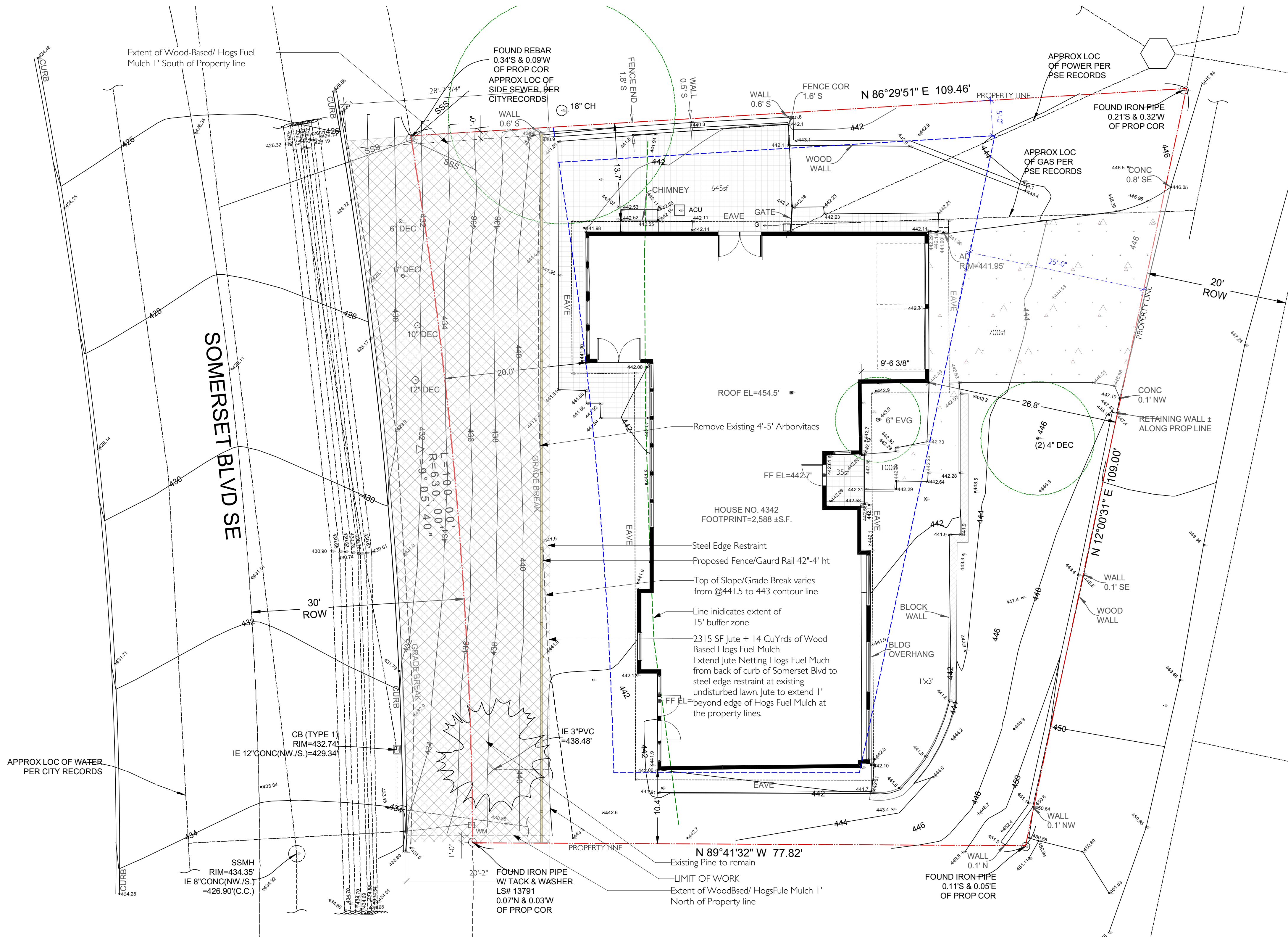
4342 SOMERSET BLVD SE
Bellevue, WA 98006

SHEET NAME:

JUTE NETTING+ MULCH PLAN

SHEET NUMBER:

LUP-3 of 4



SCALE: 1/8"=1'0"

BMP C121: Mulching

Purpose

Mulching soils provides immediate temporary protection from erosion. Mulch also enhances plant establishment by conserving moisture, holding fertilizer, seed, and topsoil in place, and moderating soil temperatures. There is an enormous variety of mulches that can be used. This section discusses only the most common types of mulch.

Conditions of Use

As a temporary cover measure, mulch should be used:

- For less than 30 days on disturbed areas that require cover.
- At all times for seeded areas, especially during the wet season and during the hot summer months.
- During the wet season on slopes steeper than 3H:1V with more than 10 feet of vertical relief.

Mulch may be applied at any time of the year and must be refreshed periodically.

- For seeded areas mulch may be made up of 100 percent: cottonseed meal; fibers made of wood, recycled cellulose, hemp, kenaf, compost; or blends of these. Tackifier shall be plant-based, such as guar or alpha plantago, or chemical-based such as polyacrylamide or polymers. Any mulch or tackifier product used shall be installed per manufacturer’s instructions. Generally, mulches come in 40-50 pound bags. Seed and fertilizer are added at time of application.

Design and Installation Specifications

For mulch materials, application rates, and specifications, see [Table 4.1.8](#). Always use a 2-inch minimum mulch thickness; increase the thickness until the ground is 95% covered (i.e. not visible under the mulch layer). Note: Thickness may be increased for disturbed areas in or near sensitive areas or other areas highly susceptible to erosion.

Where the option of “Compost” is selected, it should be a coarse compost that meets the following size gradations when tested in accordance with the U.S. Composting Council “Test Methods for the Examination of Compost and Composting” (TMECC) Test Method 02.02-B.

Coarse Compost

Minimum Percent passing 3” sieve openings 100%

Minimum Percent passing 1” sieve openings 90%

Minimum Percent passing ¾” sieve openings 70%

Minimum Percent passing ¼” sieve openings 40%

Mulch used within the ordinary high-water mark of surface waters should be selected to minimize potential flotation of organic matter. Composted organic materials have higher specific gravities (densities) than straw, wood, or chipped material. Consult Hydraulic Permit Authority (HPA) for mulch mixes if applicable.

Maintenance Standards

- The thickness of the cover must be maintained.
- Any areas that experience erosion shall be remulched and/or protected with a net or blanket. If the erosion problem is drainage related, then the problem shall be fixed and the eroded area remulched.

Table 4.1.8 Mulch Standards and Guidelines				
Mulch Material	Quality Standards	Application Rates	Remarks	
Straw	Air-dried; free from undesirable seed and coarse material.	2”-3” thick; 5 bales per 1,000 sf or 2-3 tons per acre	Cost-effective protection when applied with adequate thickness. Hand-application generally requires greater thickness than blown straw. The thickness of straw may be reduced by half when used in conjunction with seeding. In windy areas straw must be held in place by crimping, using a tackifier, or covering with netting. Blown straw always has to be held in place with a tackifier as even light winds will blow it away. Straw, however, has several deficiencies that should be considered when selecting mulch materials. It often introduces and/or encourages the propagation of weed species and it has no significant long-term benefits. It should also not be used within the ordinary high-water elevation of surface waters (due to flotation).	
Hydromulch	No growth inhibiting factors.	Approx. 25-30 lbs per 1,000 sf or 1,500 - 2,000 lbs per acre	Shall be applied with hydromulcher. Shall not be used without seed and tackifier unless the application rate is at least doubled. Fibers longer than about ¾-1 inch clog hydromulch equipment. Fibers should be kept to less than ¾ inch.	
Compost	No visible water or dust during handling. Must be produced per WAC 173-350 , Solid Waste Handling Standards, but may have up to 35% biosolids.	2” thick min.; approx. 100 tons per acre (approx. 800 lbs per yard)	More effective control can be obtained by increasing thickness to 3”. Excellent mulch for protecting final grades until landscaping because it can be directly seeded or tilled into soil as an amendment. Compost used for mulch has a coarser size gradation than compost used for BMP C125 or BMP T5.13 (see Chapter 5 of Volume V of this manual) It is more stable and practical to use in wet areas and during rainy weather conditions. Do not use near wetlands or near phosphorous impaired water bodies.	
Chipped Site Vegetation	Average size shall be several inches. Gradations from fines to 6 inches in length for texture, variation, and interlocking properties.	2” thick min.;	This is a cost-effective way to dispose of debris from clearing and grubbing, and it eliminates the problems associated with burning. Generally, it should not be used on slopes above approx. 10% because of its tendency to be transported by runoff. It is not recommended within 200 feet of surface waters. If seeding is expected shortly after mulch, the decomposition of the chipped vegetation may tie up nutrients important to grass establishment.	
Wood-based Mulch or Wood Straw	No visible water or dust during handling. Must be purchased from a supplier with a Solid Waste Handling Permit or one exempt from solid waste regulations.	2” thick min.; approx. 100 tons per acre (approx. 800 lbs. per cubic yard)	This material is often called “hog or hogged fuel.” The use of mulch ultimately improves the organic matter in the soil. Special caution is advised regarding the source and composition of wood-based mulches. Its preparation typically does not provide any weed seed control, so evidence of residual vegetation in its composition or known inclusion of weed plants or seeds should be monitored and prevented (or minimized).	

Wood Strand Mulch	A blend of loose, long, thin wood pieces derived from native conifer or deciduous trees with high length-to-width ratio.	2” thick min.	Cost-effective protection when applied with adequate thickness. A minimum of 95-percent of the wood strand shall have lengths between 2 and 10-inches, with a width and thickness between 1/16 and ¾-inches. The mulch shall not contain resin, tannin, or other compounds in quantities that would be detrimental to plant life. Sawdust or wood shavings shall not be used as mulch. (WSDOT specification 9-14.4(4))
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ISSUE DATE: 04/15/21

CLIENT NAME:

CHEN&PORWAL RESIDENCE
4342 SOMERSET BLVD SE
Bellevue, WA 98006

SHEET NAME:

BMP-MULCH
+NETTING

SHEET NUMBER:

LUP-4 of 4

BMP C122: Nets and Blankets

Purpose

Erosion control nets and blankets are intended to prevent erosion and hold seed and mulch in place on steep slopes and in channels so that vegetation can become well established. In addition, some nets and blankets can be used to permanently reinforce turf to protect drainage ways during high flows. Nets (commonly called matting) are strands of material woven into an open, but high-tensile strength net (for example, coconut fiber matting). Blankets are strands of material that are not tightly woven, but instead form a layer of interlocking fibers, typically held together by a biodegradable or photodegradable netting (for example, excelsior or straw blankets). They generally have lower tensile strength than nets, but cover the ground more completely. Coir (coconut fiber) fabric comes as both nets and blankets.

Conditions of Use

Erosion control nets and blankets should be used:

- To aid permanent vegetated stabilization of slopes 2H:1V or greater and with more than 10 feet of vertical relief.
- For drainage ditches and swales (highly recommended). The application of appropriate netting or blanket to drainage ditches and swales can protect bare soil from channelized runoff while vegetation is established. Nets and blankets also can capture a great deal of sediment due to their open, porous structure. Nets and blankets can be used to permanently stabilize channels and may provide a cost-effective, environmentally preferable alternative to riprap. 100 percent synthetic blankets manufactured for use in ditches may be easily reused as temporary ditch liners.

Disadvantages of blankets include:

- Surface preparation required.
- On slopes steeper than 2.5H:1V, blanket installers may need to be roped and harnessed for safety.
- They cost at least \$4,000-6,000 per acre installed.

Advantages of blankets include:

- Installation without mobilizing special equipment.
- Installation by anyone with minimal training
- Installation in stages or phases as the project progresses.
- Installers can hand place seed and fertilizer as they progress down the slope.
- Installation in any weather.
- There are numerous types of blankets that can be designed with various parameters in mind. Those parameters include: fiber blend, mesh strength, longevity, biodegradability, cost, and availability.

Design and Installation Specifications

- See [Figure 4.1.3](#) and [Figure 4.1.4](#) for typical orientation and installation of blankets used in channels and as slope protection. Note: these are typical only; all blankets must be installed per manufacturer’s installation instructions.
- Installation is critical to the effectiveness of these products. If good ground contact is not achieved, runoff can concentrate under the product, resulting in significant erosion.
- Installation of Blankets on Slopes:
 - Complete final grade and track walk up and down the slope.
 - Install hydromulch with seed and fertilizer.
 - Dig a small trench, approximately 12 inches wide by 6 inches deep along the top of the slope.
 - Install the leading edge of the blanket into the small trench and staple approximately every 18 inches. NOTE: Staples are metal, “U”-shaped, and a minimum of 6 inches long. Longer staples are used in sandy soils. Biodegradable stakes are also available.
 - Roll the blanket slowly down the slope as installer walks backwards. NOTE: The blanket rests against the installer’s legs. Staples are installed as the blanket is unrolled. It is critical that the proper staple pattern is used for the blanket being installed. The blanket is not to be allowed to roll down the slope on its own as this stretches the blanket making it impossible to maintain soil contact. In addition, no one is allowed to walk on the blanket after it is in place.
 - If the blanket is not long enough to cover the entire slope length, the trailing edge of the upper blanket should overlap the leading edge of the lower blanket and be stapled. On steeper slopes, this overlap should be installed in a small trench, stapled, and covered with soil.

- With the variety of products available, it is impossible to cover all the details of appropriate use and installation. Therefore, it is critical that the design engineer consult the manufacturer’s information and that a site visit takes place in order to ensure that the product specified is appropriate. Information is also available at the following web sites:

- WSDOT (Section 3.2.4):
<http://www.wsdot.wa.gov/NR/rdonlyres/3B41E087-FA86-4717-932D-D7A8556CCDS7/0/ErosionTrainingManual.pdf>
- Texas Transportation Institute:
http://www.txdot.gov/business/doing_business/product_evaluation/erosion_control.htm

Maintenance Standards

- Use jute matting in conjunction with mulch ([BMP C121](#)). Excelsior, woven straw blankets and coir (coconut fiber) blankets may be installed without mulch. There are many other types of erosion control nets and blankets on the market that may be appropriate in certain circumstances.
- In general, most nets (e.g., jute matting) require mulch in order to prevent erosion because they have a fairly open structure. Blankets typically do not require mulch because they usually provide complete protection of the surface.
- Extremely steep, unstable, wet, or rocky slopes are often appropriate candidates for use of synthetic blankets, as are riverbanks, beaches and other high-energy environments. If synthetic blankets are used, the soil should be hydromulched first.
- 100-percent biodegradable blankets are available for use in sensitive areas. These organic blankets are usually held together with a paper or fiber mesh and stitching which may last up to a year.
- Most netting used with blankets is photodegradable, meaning they break down under sunlight (not UV stabilized). However, this process can take months or years even under bright sun. Once vegetation is established, sunlight does not reach the mesh. It is not uncommon to find non-degraded netting still in place several years after installation. This can be a problem if maintenance requires the use of mowers or ditch cleaning equipment. In addition, birds and small animals can become trapped in the netting.
- Maintain good contact with the ground. Erosion must not occur beneath the net or blanket.
- Repair and staple any areas of the net or blanket that are damaged or not in close contact with the ground.
- Fix and protect eroded areas if erosion occurs due to poorly controlled drainage.

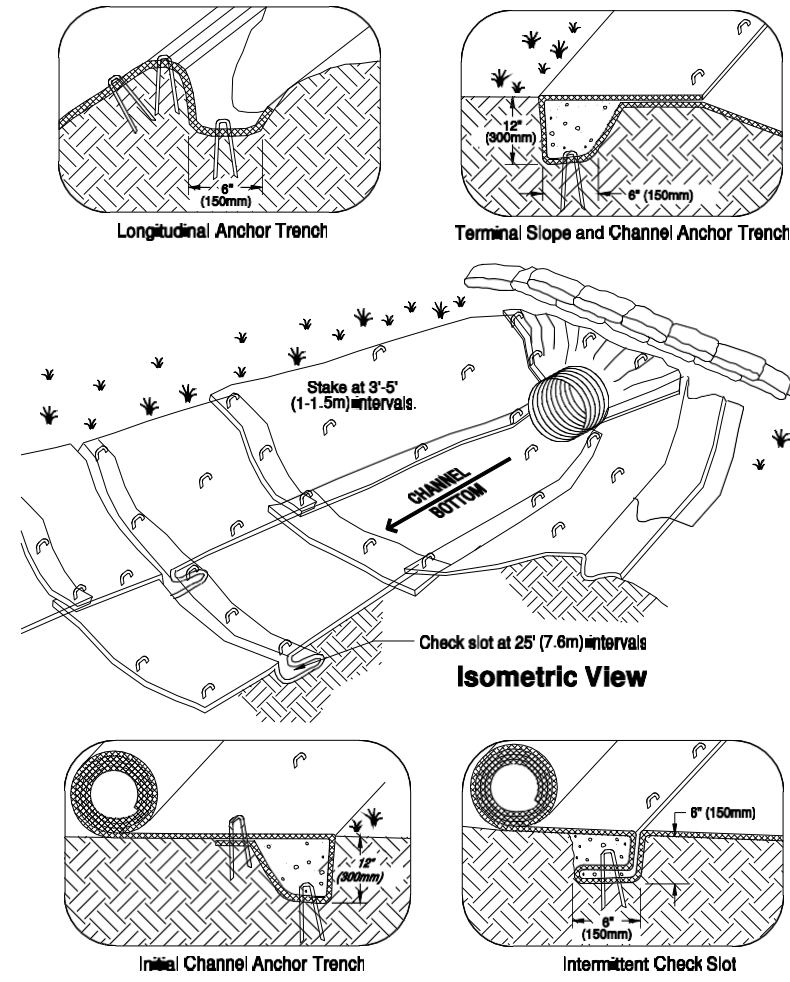


Figure 4.1.3 – Channel Installation

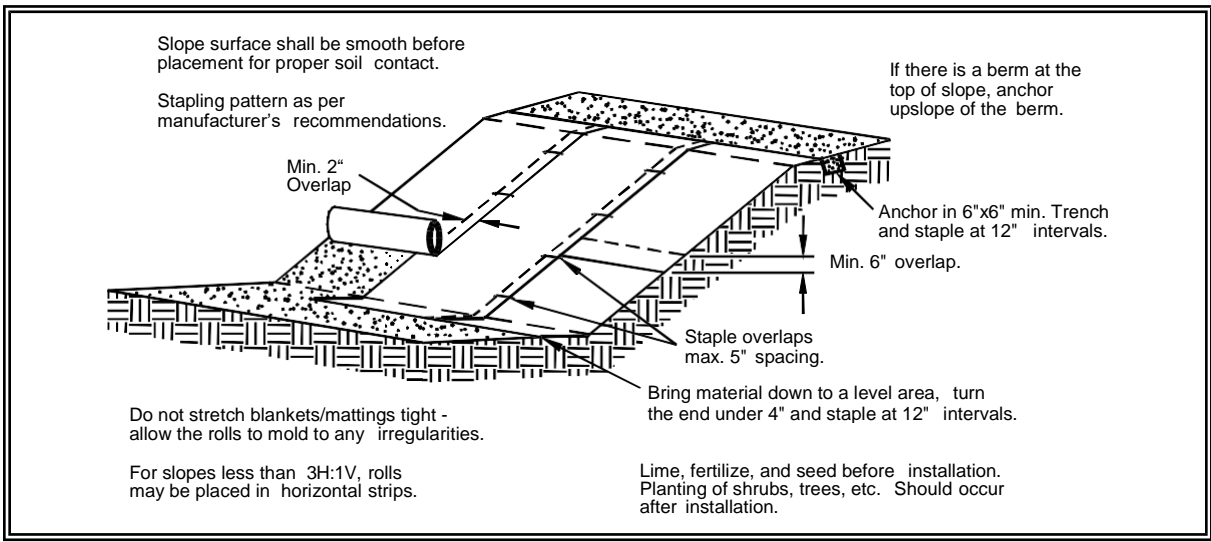


Figure 4.1.4 – Slope Installation



associated
earth sciences
incorporated

May 20, 2021
Project No. 20210132E001

Chloe Chen
4342 Somerset Boulevard SE
Bellevue, Washington 98006

Subject: Geotechnical Engineering Recommendations
Chen-Porwal Residence
4342 Somerset Boulevard SE
Bellevue, Washington 98006

Dear Ms. Chen:

Associated Earth Sciences, Inc. (AESI) is pleased to present our findings and geotechnical recommendations related to proposed site landscape and hardscape improvements. We understand that the City of Bellevue has required a geotechnical study for the proposed improvements along the steeply sloping portion of the site. Our general understanding of the project is based on discussions with you and our experience working in the project vicinity.

This letter-report has been prepared for the exclusive use of Ms. Chloe Chen and her agents, for specific application to this project. Within the limitations of scope and schedule, our services have been performed in accordance with generally accepted local geotechnical engineering practices in effect at the time our letter-report was prepared. No other warranty, express or implied, is made. Our work was performed in general accordance with our proposal, dated April 5, 2021.

PROJECT BACKGROUND

The site is a single-family residential parcel located at 4342 Somerset Boulevard SE in Bellevue, Washington, as shown on Figure 1, "Vicinity Map." The parcel is trapezoidal in shape with an approximate area of 0.22 acres and is occupied by a single-story residence reportedly constructed in 1960. The parcel is bounded by residential properties to the north and south, a shared driveway to the east, and Somerset Boulevard SE to the west. Site topography is relatively flat to gently sloping around the existing residence, and then slopes moderately to steeply downward toward Somerset Boulevard SE to the west. We understand that the project consists of hardscaping and drainage improvements for a low retaining wall in the front (east) yard area and new plantings along the west slope leading down to Somerset Boulevard SE.

SUBSURFACE EXPLORATION

Subsurface conditions at the site were observed during completion of two shallow hand-auger borings completed with hand tools on April 19, 2021. The borings were completed by an experienced geologist from our firm. Descriptions contained in the exploration logs are based on visual classification of the soils encountered, difficulty of excavation, and previous experience with similar soils. Representative samples of the materials encountered in the hand-auger borings were collected, placed in sealed plastic bags, and returned to our office for further visual evaluation and laboratory testing. The approximate hand-auger boring locations are shown relative to existing site features on the "Existing Site and Exploration Plan," Figure 2, attached with this letter-report. Interpretive logs of the subsurface conditions encountered at each exploration location are included in Appendix A.

The conclusions and recommendations presented in this letter-report are based on the explorations completed for this study. The number, locations, and depths of our explorations were completed within site and budget constraints. Because of the nature of exploratory work below ground, interpolation of subsurface conditions between field explorations is necessary. It should be noted that differing subsurface conditions may sometimes be present due to the random nature of deposition and the alteration of topography by past grading and/or filling. The nature and extent of any variations between the field explorations may not become fully evident until construction. If variations are observed at that time, it may be necessary to re-evaluate specific recommendations in this letter-report and make appropriate changes.

SUBSURFACE CONDITIONS

Landscaping Bark

Our exploration at HB-2 encountered approximately 12 inches of highly organic, landscaping tree bark.

Fill

Both explorations encountered very loose to loose, moist, dark brown, silty, fine sand, with occasional organics and trace construction debris present. These materials are interpreted as fill soils placed during the original plat development and/or after recent retaining wall construction in the front yard. Fill is expected to be found around buried utilities, foundation/wall backfill areas, and beneath landscape improvements.

Blakeley Formation

Both HB-1 and HB-2 met refusal at depths of approximately 3 and 4 feet, respectively, due to the presence of rock. At these depths, fragments of light orangish brown, fine, sandy siltstone were recovered. We interpret this material as competent bedrock belonging to the Blakeley Formation. This formation was initially deposited in a shallow marine, near-shore environment and typically consists of mudstone, claystone, siltstone, and sandstone. We were not able to penetrate the Blakeley Formation siltstone using hand tools.

Published Geologic Map

Review of the regional geologic map titled *Geologic Map of Bellevue, Washington, April 2012*, by GeoMapNW indicates that the subject site is underlain by Vashon lodgement till sediments with outcrops of Blakeley Formation bedrock mapped nearby. As the site is interpreted to have previously undergone significant grading to create a level area for the residence with an embankment cut slope leading down to Somerset Boulevard SE, our explorations are in general agreement with the regional geologic mapping.

Natural Resources Conservation Service Map

Review of the U.S. Department of Agriculture Soil Conservation Service, now referred to as Natural Resources Conservation Service (NRCS), Web Soil Survey indicates that the subject site is underlain by Beausite gravelly sandy loam, 6 to 15 percent slopes (BeC). This mapped soil type has a parent material consisting of glacial till over sandstone, which is in general agreement with the sediments encountered in our explorations.

Hydrology

Groundwater was not observed in any of the explorations completed for this study. We observed areas of standing water present in the front yard, where a recently placed sod layer lies directly over the Blakeley Formation rock. We interpret this water as perched on top of the Blakeley Formation bedrock. Perched groundwater occurs when vertical infiltration is impeded by less-permeable soil or rock and horizontal migration occurs. It should be noted that fluctuations in the level and flow of groundwater may occur due to the time of year and variations in the amount of precipitation.

GEOLOGIC HAZARDS

Steep Slope Hazards

Steep slope hazard areas are defined by the *City of Bellevue Land Use Code* (LUC) 20.25H.120.A.2 based on topographic conditions. The slope along the west edge of the property has a total height of approximately 10 to 13 feet, and ranges in inclination from 40 to 50 percent. Based on conversations with the client, review of King County iMap topographic data, and our site reconnaissance, we understand that the slope west of the existing residence is likely classified as a steep slope hazard. As specified in LUC 20.25H.120.B, a top-of-slope buffer of 50 feet is required for all steep slopes. Modifications to the steep slope critical area and critical area buffer may be considered through the City of Bellevue critical areas report process.

Our exploration on the slope, HB-2, encountered approximately 3 feet of loose fill soils over intact Blakeley Formation bedrock. The Blakeley Formation bedrock could not be penetrated with hand tools. This rock unit was also encountered upslope at exploration HB-1, and was visually observed in the front lawn, east of the residence, underneath a recently placed layer of grass sod.

The slope is currently sparsely vegetated and blanketed by approximately 12 inches of loose, organic, landscaping bark and mulch. As the steep slope is primarily composed of Blakeley Formation bedrock, it is our opinion that the proposed site improvements will not have an adverse effect on slope stability.

GEOTECHNICAL DESIGN RECOMMENDATIONS

Our explorations indicate that, from a geotechnical engineering standpoint, the proposed hardscape, drainage, and planting improvements are feasible provided the recommendations contained herein are properly followed. As previously discussed, the project site is underlain by loose fill soils of varying thickness placed over Blakeley Formation bedrock. These sediments are suitable for hardscape support with proper preparation. We recommend that loose fill soils, where present under areas of new hardscapes, be compacted in place to a firm and unyielding state prior to construction.

Site Preparation

All topsoil, vegetation, and any other deleterious materials should be stripped or removed from the proposed hardscape areas. Areas where loose surficial soils exist should be compacted in place to a firm and unyielding state.

Structural Fill

Structural fill may be needed to create grades for hardscaping improvements. All references to structural fill in this letter-report refer to subgrade preparation, fill type, placement, and compaction of materials, as discussed in this section. If a percentage of compaction is specified under another section of this letter-report, the value given in that section should be used. Note, structural fill should not be placed on steep slopes.

Structural fill is defined as non-organic soil, acceptable to the geotechnical engineer, placed in maximum 8-inch loose lifts, with each lift being compacted to at least 95 percent of the modified Proctor maximum dry density using *ASTM International* (ASTM) D-1557 as the standard.

Soils in which the amount of fine-grained material (smaller than the No. 200 sieve) is greater than approximately 5 percent (measured on the minus No. 4 sieve size) should be considered moisture-sensitive. The site soils are very silty and are not considered suitable for reuse as structural fills. For all fills, a select import material consisting of a clean, free-draining gravel and/or sand should be used. Free-draining fill consists of non-organic soil with the amount of fine-grained material limited to 5 percent by weight when measured on the minus No. 4 sieve fraction and at least 30 percent retained on the No. 4 sieve.

A representative from our firm should observe the subgrades and be present during placement of structural fill to observe the work and perform a representative number of in-place density tests. In this way, the adequacy of the earthwork may be evaluated as filling progresses and any problem areas may be corrected at that time. It is important to understand that taking random compaction tests on a part-time basis will not assure uniformity or acceptable performance of a fill. As such, we are available to aid the owner in developing a suitable monitoring and testing frequency.

Drainage Considerations

The front yard reportedly has poor drainage and will not support turf growth. At the time of our site visit, a short retaining wall had recently been constructed along the east edge of the yard, and recently placed grass sod was present along the east and south sides of the existing residence. When the sod layer was lifted, bedrock was observed immediately below. Standing water was observed in multiple locations within the grass sod east of the residence.

Groundwater, precipitation, and water used for irrigation will likely continue to perch on top of the Blakeley Formation bedrock. To mitigate this issue and reduce standing water in the front yard area, we recommend that the sod be temporarily removed and a 4-inch-thick select import drainage layer consisting of a clean, free-draining gravel and/or sand be placed. Free-draining fill consists of non-organic soil with the amount of fine-grained material limited

to 5 percent by weight when measured on the minus No. 4 sieve fraction and at least 30 percent retained on the No. 4 sieve. The free-draining layer should, in turn, be drained by a 4-inch-diameter polyvinyl chloride (PVC) perforated pipe placed at the lowest point in the yard/bedrock surface. Even with drainage improvements, it is likely that natural turf will not thrive in this setting due to the minimal available topsoil thickness over the bedrock, limited exposure to sunlight, and the generally wet/cloudy Western Washington climate. As an alternative, a premium, natural appearing synthetic turf should be considered. If used, synthetic turf and installation and drainage elements should follow manufacturer guidelines.

All retaining walls should be provided with a drain at the footing elevation. We recommend that the east yard wall be rebuilt or retrofitted with a drain pipe set at or below the base block elevations. This may require additional effort to locally break and excavate the bedrock to achieve a continuous slope to the discharge. The wall drains should consist of rigid 4-inch-diameter PVC pipe surrounded by washed gravel. The east retaining wall should also be lined with a minimum, 12-inch-thick, washed gravel blanket that extends from the wall drain pipe to the ground surface to collect surface runoff from the landscape slope above the wall. Surface cleanouts should be provided at pipe ends and bends to facilitate future maintenance.

Exterior grades should be sloped downward away from the residence to promote surface drainage. Since the bedrock soils found on the site are not conducive to stormwater infiltration, the collected water should be directed to a City-approved discharge location.

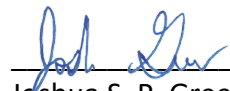
PROJECT DESIGN AND CONSTRUCTION MONITORING

We are available to provide geotechnical engineering and monitoring services during construction. The integrity of the earthwork and foundations depends on proper site preparation and construction procedures. In addition, engineering decisions may have to be made in the field in the event that variations in subsurface conditions become apparent. Construction monitoring services are not part of this current scope of work.

CLOSURE

We appreciate the opportunity to be of service to you on this project. Should you have any questions regarding this letter-report or other geotechnical aspects of the project, please call us at your earliest convenience.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Kirkland, Washington



Joshua S. P. Greer, G.I.T.
Senior Staff Geologist



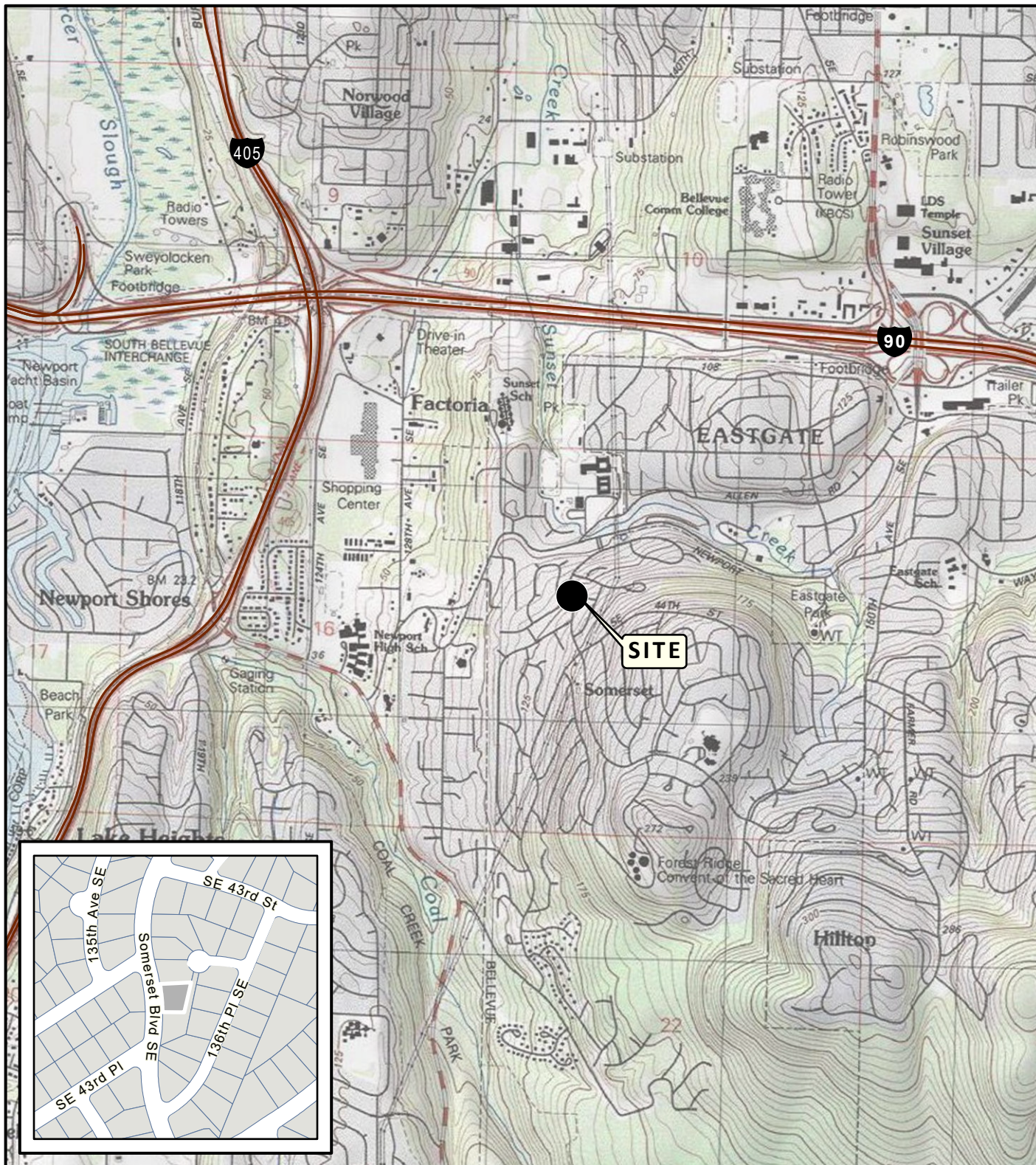
Bruce L. Blyton, P.E.
Senior Principal Engineer



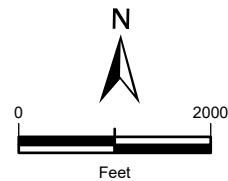
Jeffrey P. Laub, P.E., L.G., L.E.G.
Associate Engineer/Geologist

Attachments: Figure 1: Vicinity Map
 Figure 2: Existing Site and Exploration Plan
 Appendix A: Exploration Logs

G:\GIS_Projects\aaY2021\1210132 Chen-Porwal.aprx | 20210132E001 F1 VM_ChenPorwal.aprx | 4/22/2021 4:08 PM



DATA SOURCES / REFERENCES:
USGS: 7.5' SERIES TOPOGRAPHIC MAPS, ESRI/I-CUBED/NGS 2013
KING CO: STREETS, CITY LIMITS, PARCELS, PARKS 3/20
LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE



NOTE: BLACK AND WHITE
REPRODUCTION OF THIS COLOR
ORIGINAL MAY REDUCE ITS
EFFECTIVENESS AND LEAD TO
INCORRECT INTERPRETATION



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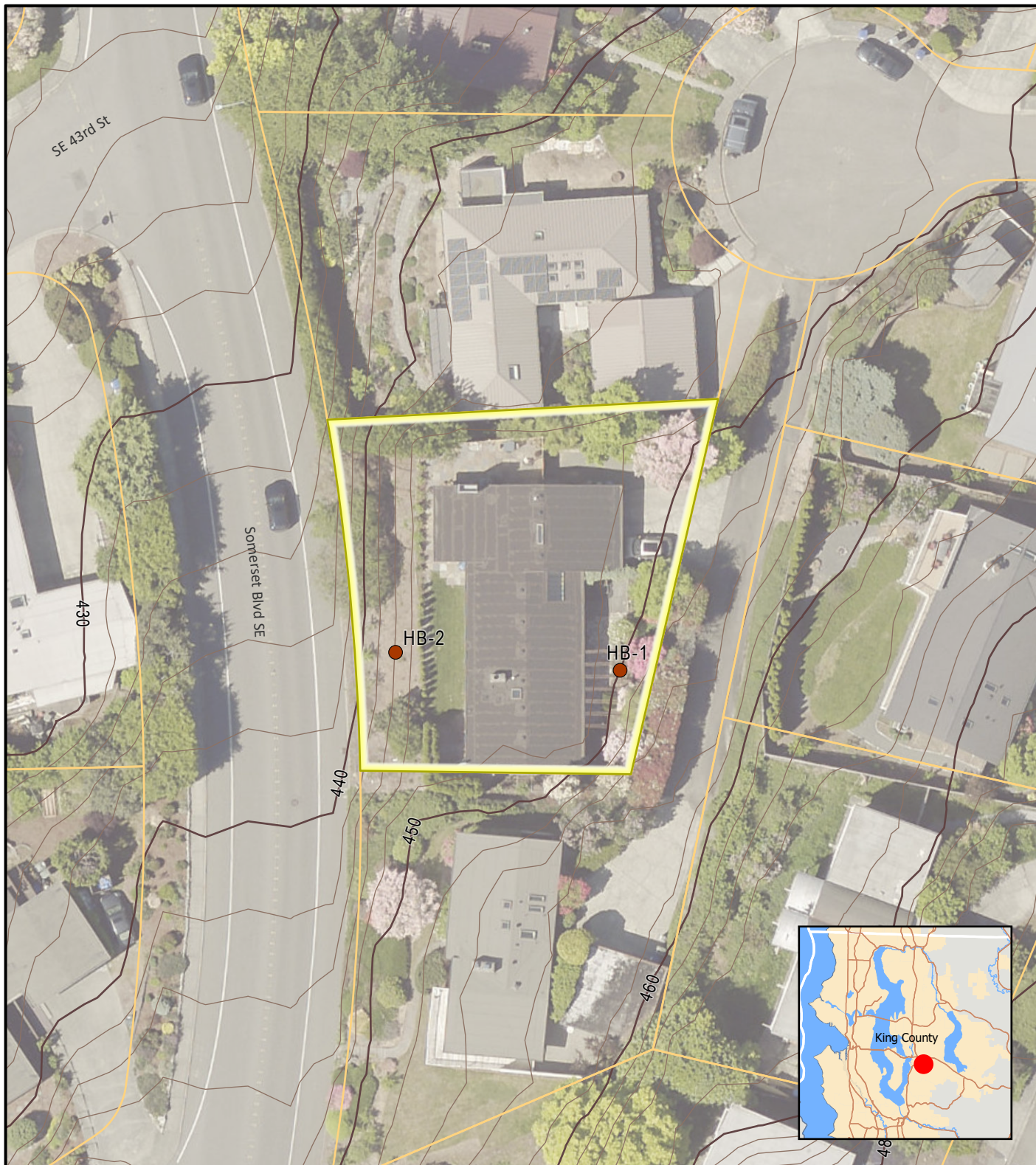
VICINITY MAP

CHEN-PORWAL RESIDENCE
BELLEVUE, WASHINGTON

PROJ NO.
20210132E001

DATE:
4/21

FIGURE:
1

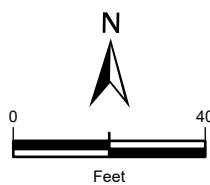


LEGEND

- SITE
- HAND BORING
- PARCEL

- ~ CONTOUR 10 FT
- ~ CONTOUR 2 FT

DATA SOURCES / REFERENCES:
 PSLC: KING COUNTY 2016, GRID CELL SIZE IS 3'.
 DELIVERY 1 FLOWN 2/24/16 - 3/28/16
 CONTOURS FROM LIDAR
 KING CO: STREETS, PARCELS, 3/20
 AERIAL: PICTOMETRY INT. 2019
 LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE



NOTE: BLACK AND WHITE
 REPRODUCTION OF THIS COLOR
 ORIGINAL MAY REDUCE ITS
 EFFECTIVENESS AND LEAD TO
 INCORRECT INTERPRETATION



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EXISTING SITE AND EXPLORATION PLAN

CHEN-PORWAL RESIDENCE BELLEVUE, WASHINGTON

PROJ NO.
 20210132E001

DATE:
 4/21

FIGURE:
 2

APPENDIX A

Exploration Logs



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Exploration Boring

Project Number
20210132E001

Exploration Number
HB-1

Sheet
1 of 1

Project Name Chen-Porwal Residence

Location Bellevue, WA

Driller/Equipment Hand Boring

Hammer Weight/Drop N/A

Ground Surface Elevation (ft) 439

Datum NAVD 88

Date Start/Finish 4/19/2021, 4/19/2021

Hole Diameter (in) 4

Depth (ft)	S T	Samples	Graphic Symbol	DESCRIPTION	Well Completion	Water Level	Blows/6"	Blows/Foot				Other Tests
								10	20	30	40	
5				Fill Very loose to loose, moist, dark brown, silty, fine SAND; occasional organics and debris (SM).								
				Becomes very moist to wet at 3 feet.								
				Blakely Formation - Dense to very dense, moist, light orangish brown, fragments of fine sandy, SILTSTONE.								
				Bottom of exploration boring at 3.1 feet No groundwater encountered.								

Sampler Type (ST):



2" OD Split Spoon Sampler (SPT)



No Recovery

M - Moisture



3" OD Split Spoon Sampler (D & M)



Ring Sample

Water Level ()



Grab Sample



Shelby Tube Sample

Water Level at time of drilling (ATD)

Logged by: JG

Approved by: JHS



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Exploration Boring

Project Number
20210132E001

Exploration Number
HB-2

Sheet
1 of 1

Project Name Chen-Porwal Residence

Location Bellevue, WA

Driller/Equipment Hand Boring

Hammer Weight/Drop N/A

Ground Surface Elevation (ft) 431

Datum NAVD 88

Date Start/Finish 4/19/2021, 4/19/2021

Hole Diameter (in) 4

Depth (ft)	S T	Samples	Graphic Symbol	DESCRIPTION	Well Completion	Water Level	Blows/6" Blows/ft	Blows/Foot				Other Tests
								10	20	30	40	
				Landscaping Bark Tree bark; highly organic material.								
				Fill Very loose to loose, moist, dark brown, silty, fine SAND; occasional organics (SM).								
				Blakely Formation - Dense to very dense, moist, light orangish brown, fragments of fine sandy, SILTSTONE. Bottom of exploration boring at 4.1 feet No groundwater encountered.								
5												

Sampler Type (ST):



2" OD Split Spoon Sampler (SPT)



3" OD Split Spoon Sampler (D & M)



Grab Sample



No Recovery



Ring Sample



Shelby Tube Sample

M - Moisture



Water Level ()



Water Level at time of drilling (ATD)

Logged by: JG

Approved by: JHS